REMARKS

In response to the above-identified Office Action ("Action"), Applicants traverse the rejections and include amendments to the claims to include subject matter which Applicants believe is not anticipated by, or obvious in view of, the references and seeks reconsideration of the Examiner's rejections. Claims 1-9 are pending in the present application. In this response, claims 2-5, 7, 8 and 9 are amended, claim 6 is cancelled and no claims are added.

I. Claim Amendments

Applicants respectfully submit herewith amendments to claims 2-5, 7, 8 and 9.

Claims 3 and 4 are amended to depend from claim 2 instead of claim 1 as requested by the Examiner.

Claims 5 and 9 are amended to incorporate the limitations of now cancelled claim 6. Claims 5 and 9 are further amended to recite "a" instead of "the" before the first occurrence of the phrases "sector phase quantizer" and "re-encoder" to provide proper antecedent basis as requested by the Examiner. In addition, claim 9 is amended to delete the term "recording" and instead recite "a computer readable medium storing a program."

Claims 7 and 8 are amended to depend from claim 5 instead of now cancelled claim 6.

Lastly, claims 2, 5 and 9 are amended to clarify that the symbol Φ is used to refer to the basis phase.

The amendments merely correct informalities and therefore do not add new matter and are supported by the specification. In view of the foregoing, Applicants respectfully request consideration and entry of the amendments to claims 3-5, 7, 8 and 9.

II. Specification Amendments

Applicants respectfully submit herewith amendments to the specification in which the abstract has been amended to be within the range of 50-150 words. In addition, on page 3, line

12 of the specification, the recitation of "demodulator 120" has been amended to correctly recite "demodulator 121" for consistency with the rest of the specification and figures.

The amendments do not add new matter and are supported by the specification. In view of the foregoing, Applicants respectfully request consideration and entry of the amendments to the specification.

III. Claim Objections

In the outstanding Action, claims 2-4, 6 and 9 are objected to because of informalities.

In the instant response, claim 6 is cancelled and the limitations of claim 6 are now recited in claims 5 and 9. Thus, in response to the Examiner's objection to claims 2 and 6 for failure to define Φ, claims 2, 5 and 9 are amended to clarify that Φ refers to the basis phase.

In regard to claims 3 and 4, these claims are amended to depend from claim 2 instead of claim 1 as requested by the Examiner.

Lastly, claim 9 is amended to recite a "computer readable medium" instead of a "computer readable recording medium" as proposed by the Examiner.

Applicants believe the foregoing amendments correct the informalities noted by the Examiner and the claims are therefore in proper form. Applicants respectfully request reconsideration and withdrawal of the objection of claims 2-4, 6 and 9.

IV. Claim Rejections - 35 U.S.C. §112

In the outstanding Action, claims 5-9 are rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 is cancelled therefore the rejection of claim 6 on this basis is moot.

As previously discussed, claims 5 and 9 are amended to recite "a" instead of "the" before the first occurrence of the phrases "sector phase quantizer" and "re-encoder" to provide proper

antecedent basis. Applicants believe the foregoing amendments correct the informalities noted by the Examiner and that the claims are now in compliance with 35 U.S.C. §112. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 5 and 7-9 on this basis.

V. Claim Rejections - 35 U.S.C. §102

In the outstanding Action, claims 1 and 5 are rejected under 35 U.S.C. §102(a) as being anticipated by Applicant Admitted Prior Art ("AAPA").

It is axiomatic to a finding of anticipation that the relied upon reference teach each and every element of the rejected claim.

Applicants respectfully traverse the rejection of claim 1. Applicants respectfully submit AAPA fails to teach at least the element of "a coset mapper for generating 3-bit soft decision data based on the computed coordinate values" as recited in claim 1. As described in Applicants' specification, the claimed coset mapper essentially replaces the sector phase quantizer/soft decision unit steps used in the prior art thereby allowing for output of a soft decision bit to a viterbi decoder 240 based on coordinate values from a demodulator 210 in the absence of the sector phase quantizer/soft decision unit. See Application, page 6, lines 13-17, pages 10-13 and Figure 2.

The Examiner alleges the soft decision mapper represented as block 123 in Figure 1 of AAPA teaches this element. Applicants respectfully disagree. In particular, as described in Applicants' specification, in the prior art, a sector phase quantizer 122 is required to obtain phase information containing location and receiving signal for the outputting signals and then this information is input to the soft decision unit 123 before any soft decision data is received by the viterbi decoder 124. See Application, pages 3-5. Thus, the soft decision mapper 123 of the prior art does not generate 3-bit soft decision data based on computed coordinate values of the demodulator as recited in claim 1 but instead values inputted from a sector phase quantizer.

Accordingly, the soft decision mapper 123 of Figure 1 is different from the coset mapper recited in claim 1. For at least the foregoing reasons, the Examiner has failed to identify a

portion of the cited art teaching at least this element of claim 1. Since each element of claim 1 is not found within the prior art, anticipation may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 1 under 35 U.S.C. §102 in view of AAPA.

In regard to claim 5, AAPA fails to teach at least the element of "generating 3-bit soft decision data based on computed coordinate values x' and y' by using equation x'=cos[2(ø – Φ)], y'=sin[2(ø – Φ)] based on a phase difference between a basis phase, Φ, and ø, wherein ø is computed based on a x, coordinate of I axis and a y, coordinate of Q axis in a constellation of the received signal" as recited in the amendments to claim 5. The failure of AAPA to teach this element is evidenced by the Examiner's admission on page 8 of the Action that the prior art fails to teach providing the 3-bit soft decision by using the equation x'=cos[2(ø – Φ)], y'=sin[2(ø – Φ)] based on a phase difference between a basis phase and ø. Since AAPA fails to teach at least this element of claim 5, anticipation may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 5 under 35 U.S.C. §102 in view of AAPA.

VI. Claim Rejections - 35 U.S.C. §103

In the outstanding Action, claim 9 is rejected under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of U.S. Patent No. 5,852,630 issued to Langberg et al. ("Langberg").

To establish a *prima facie* case of obviousness, the Examiner must show the cited references, combined, teach or suggest the claimed combination of elements or identify an apparent reason to combine prior art elements in the manner claimed.

Applicants respectfully submit, AAPA in view of Langberg fails to teach or suggest or provide any apparent reason for at least the element of "generating 3-bit soft decision data based on computed coordinate values x' and y' by using equation x'=cos[2(ø – Φ)], y'=sin[2(ø – Φ)] based on a phase difference between a basis phase, Φ, and ø, wherein ø is computed based on a x, coordinate of I axis and a y, coordinate of Q axis in a constellation of the received signal" as recited in amended claim 9. The failure of the cited art to provide this element is evidenced by

the Examiner's admission on page 8 of the Action that the prior art fails to teach providing the 3-bit soft decision by using the equation $x'=\cos[2(\phi - \Phi)]$, $y'=\sin[2(\phi - \Phi)]$ based on a phase difference between a basis phase and ϕ. Since the references fails to teach at least this element of claim 9, a *prima facie* case of obviousness may not be established. Applicants respectfully request reconsideration and withdrawal of the rejection of claim 9 under 35 U.S.C. §103 over AAPA in view of Langberg.

VII. Allowable Subject Matter

Applicants respectfully acknowledge the Examiner's indication that claims 2-4 would be allowable if rewritten (1) in independent form including all the limitations of the base claim and any intervening claims and (2) to overcome the objections set forth in the section of claim objections. As previously noted, all the objections to the claims have been overcome. Claims 2-4 depend from claim 1 and incorporate the limitations thereof. At least for the reasons previously discussed, Applicants believe claim 1 is patentable over the prior art. Thus, for at least the reason that claims 2-4 depend from an allowable base claim, Applicants believe claims 2-4 are in condition for allowance without rewriting them as suggested by the Examiner. In view of the foregoing, Applicants respectfully request allowance of claims 2-4 at the Examiner's earliest convenience.

CONCLUSION

In view of the foregoing, it is believed that all claims now pending, namely 1-5 and 7-9, are in condition for allowance and such action is earnestly solicited at the earliest possible date. If there are any additional fees due in connection with the filing of this response, please charge those fees to our Deposit Account No. 02-2666. Questions regarding this matter should be directed to the undersigned at (310) 207-3800.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR, & ZAFMAN LLP

Dated: June 6, 2007

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CERTIFICATE OF TRANSMISSION

I hereby certify that this correspondence is being submitted electronically via EFS Web to the United States Patent and Trademark Office on June 6, 2007.

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Si Vuong